

STATE OF UTAH  
DEPARTMENT OF SOCIAL SERVICES  
DIVISION OF HEALTH

AIR CONSERVATION REGULATIONS

Adopted by the  
Utah Air Conservation Committee  
and the

Utah State Board of Health

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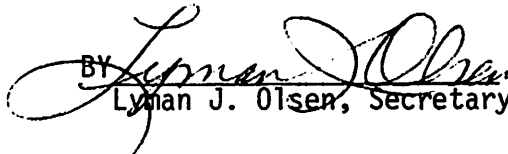
Revised: July 9, 1975

Under Authority of

26-15-4 and 26-24-5

Utah Code Annotated, 1953, as ammended

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UTAH STATE BOARD OF HEALTH

BY   
Lyman J. Olsen, Secretary

UTAH STATE DIVISION OF HEALTH  
AIR CONSERVATION REGULATIONS

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UTAH STATE DIVISION OF HEALTH

AIR CONSERVATION REGULATIONS

FOREWORD

The Air Conservation Act and these Air Conservation Regulations constitute the legal bases for control of air pollution sources in the State of Utah. These Regulations have been adopted by the Utah Air Conservation Committee and the Utah State Board of Health under authority of Section 26-24-5 and 26-15-5, Utah Code Annotated, 1953, as amended.

These Regulations apply and will be enforced throughout the State of Utah, whether adopted by local governments or not. They are recommended for adoption in local jurisdictions where environmental specialists are available to cooperate in implementing Regulation requirements.

These Regulations are designed to facilitate addition of new sections as they are adopted. It is recognized that rapid growth of technical and scientific knowledge coupled with knowledge acquired by experience will necessitate revision of these Regulations from time to time.

Federal ambient and new source standards apply throughout the Nation and are legally enforceable in Utah. Therefore, a summary of the Federal standards\* is included in Appendix A for convenience of reference.

The Committee and Board have interpreted their duties, as assigned by Legislative Act, in the following language:

"..... (1) to determine the kinds and concentrations of pollutants in the air, (2) to control the release of air pollutants to achieve a quality of air that is not harmful to man, animals, or vegetation, or which creates property damage, (3) to control man-caused air contamination which aggravates the visibility problem to which Utah is periodically subjected due to natural meteorological phenomena, (4) whenever economically feasible, to reduce or eliminate the production of pollutants which are a nuisance though not harmful to man, animals or vegetation, (5) to establish an alert system enforcing curtailment of activities of major pollution sources that are not amenable to permanent control."

The Committee has adopted the following air quality monitoring policy:

Determining ambient air pollutant concentrations is, at best, a complex

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\* The Utah Air Conservation Committee and the State Board of Health do not necessarily agree with most of the specific limits selected for ambient standards by the Federal Government. (Reference March 17, 1971 letter from the Executive Secretary, Utah Air Conservation Committee to Mr. William D. Ruckelshaus, Administrator, Environmental Protection Agency.)

operation if meaningful and useful data are to be obtained. In mountainous terrain, characteristic of most of Utah, the difficulties are particularly severe because micrometeorological variables are superimposed upon the macrometeorological situation and frequently predominate. Under these circumstances a valid monitoring program for the State must be developed on at least one unchanging base-line for reference, consisting of a network of permanently located stations at strategic sites. On this premise, it is concluded that the State monitoring system shall include an appropriate number of permanent stations capable of continuously monitoring all of the pollutants of interest, augmented with semi-permanent stations of a number and capability to assess air quality in any location deemed necessary.

UTAH STATE DIVISION OF HEALTH

AIR CONSERVATION REGULATIONS

PART I

DEFINITIONS AND GENERAL REQUIREMENTS

1.1.1 Air contaminant means any particulate matter or any gas, vapor, suspended solid or any combination thereof, excluding steam and water vapors. (Section 26-24-2 (1) UCA, 1953, as amended)

1.1.2 Air contaminant source means any and all sources of emission of air contaminants whether privately or publicly owned or operated. (Section 26-24-2 (2) UCA, 1953, as amended)

1.1.3 Air Pollution means the presence in the ambient air of one or more air contaminants in such quantities and duration and under conditions and circumstances, as is or tends to be injurious to human health or welfare, animal or plant life or property or would unreasonably interfere with the enjoyment of life or use of property, as determined by the standards, rules and regulations adopted by the Air Conservation Committee. (Section 26-24-2 (3) UCA, 1953, as amended)

1.1.4 Ambient air means the surrounding or outside air. (Section 26-24-2 (4) UCA, 1953, as amended)

1.1.5 Appropriate authority means the governing body of any city, town or county.

1.1.6 Atmosphere means the air that envelops or surrounds the earth and includes all spaces outside of building, stacks or exterior ducts.

1.1.7 Authorized local authority means a city, county, city-county, or district health department; a city, county, or combination fire department; or other local agency duly designated by appropriate authority, with approval of the State Division of Health, as the agency to issue permits for open burning and perform other appropriate functions under regulations of the State Division of Health and other lawfully adopted ordinances, codes or regulations not in conflict therewith.

1.1.8 Board means the Utah State Board of Health.

1.1.9 BTU means British Thermal Unit, the quantity of heat necessary to raise the temperature of one pound of water one degree Fahrenheit.

1.1.10 Clearing index means a number indicating the predicted rate of clearance of ground level pollutants from a given area. This number is calculated by the National Weather Service, from daily measurements of temperature lapse rates and wind speeds and directions from ground level to 10,000 feet. (See appendix for further details)

- 1.1.11 Committee means Utah Air Conservation Committee.\*
- 1.1.12 Director means the Director of the Utah State Division of Health.\*
- 1.1.13 Division means Utah State Division of Health.\*
- 1.1.14 Executive Secretary means the executive secretary of the Committee.  
(Section 26-24-2 (11) UCA, 1953, as amended)
- 1.1.15 Emission means the act of discharging, into the atmosphere, an air contaminant or an effluent which contains or may contain an air contaminant; or the effluent so discharged into the atmosphere.
- 1.1.16 Existing installation means a plant, process, process equipment, or a device, construction of which began prior to the effective date of any regulation having application to it.
- 1.1.17 Facility means machinery, equipment, structures or any part or accessories thereof, installed or acquired for the primary purpose of controlling or disposing of air pollution. It does not include an air conditioner, fan or other similar device for the comfort of personnel.
- 1.1.18 Garbage means all putrescible animal and vegetable matter resulting from the handling, preparation, cooking and consumption of food, including wastes attendant thereto.
- 1.1.19 Heavy fuel oil means a petroleum product or similar material with a boiling point higher than that of diesel fuel.
- 1.1.20 Household waste means any solid or liquid material normally generated by a family in a residence in the course of ordinary day-to-day living, including but not limited to garbage, paper products, rags, leaves and garden trash.
- 1.1.21 Open burning means any burning of combustible materials resulting in emission of products of combustion into open air without passage through a chimney or stack.
- 1.1.22 Person means any individual, public or private corporation, partnership, association, firm, trust, estate, the state or any department, institution, bureau, or agency thereof, any municipal corporation, county, city and county, or other political subdivision of the state, or any other legal entity whatsoever which is recognized by the law as being subject to rights and duties. (Section 26-24-2 (5) UCA, 1953, as amended)
- 1.1.23 Refuse means solid wastes, such as garbage and trash.

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\* See Section 26-24-2 UCA, 1953, as amended.

1.1.24 Ringelmann Chart means the chart published by the U.S. Bureau of Mines (Information Circular 7718) which illustrates graduated shades of grey to black for use in determining the light obscuring capability of particulate matter.

1.1.25 Salvage operation means any business, trade or industry engaged in whole or part in salvaging or reclaiming any product or material, including but not limited to metals, chemicals, shipping containers or drums.

1.1.26 Total suspended particulate means any dispersed matter, collected by the high volume sampler procedure.\*

1.1.27 Trash means solids not considered to be highly flammable or explosive, including, but not limited to clothing, rags, leather, plastic, rubber, floor coverings, excelsior, tree leaves, yard trimmings and other similar materials.

1.1.28 Waste means all solid, liquid or gaseous material, including, but not limited to, garbage, trash, household refuse, construction or demolition debris, or other refuse including that resulting from the prosecution of any business trade or industry.

1.1.29 Equivalent opacity means the relationship of opaqueness or percent obstruction of light to the Ringelmann chart for shades other than black and is approximately equal to the following:

<u>Equivalent Opacity (%)</u>	<u>Ringelmann No.</u>
20.....	1
40.....	2
60.....	3
80.....	4
100.....	5

1.1.30 LPG means liquid petroleum gas such as propane or butane.

1.1.31 Federal Ambient Air Standards means the allowable concentrations of air pollutants in the ambient air specified by the Federal Government and can be found in Title 40 Code of Federal Regulations, Part 50.

1.2 Air Pollution Prohibited Emission of air contaminants in sufficient quantities to cause air pollution as defined in paragraph 1.1.3 is prohibited.\*\*

1.3 Air Quality Degradation Regulated In areas of present high air quality where measured or estimated ambient levels of controllable pollutants are below the levels specified by applicable standards, any emission of pollutant to the ambient

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\* Daily sampling as specified in Title 40 Code of Federal Regulations Part 50 as published in the Fed. Reg. Vol. 36, No. 228, Thurs. Mar. 25, 1971 pages 22384 - 22397

\*\* The State Statute provides for penalties up to \$50,000/day for violation of State Statutes, Regulations, Rules or Standards. (See Section 26-24-13, UCA, 1953, as amended, for further details.)

air must be shown to result in pollution levels, as determined by appropriate evaluating procedures, within applicable ambient air standards, and will be prohibited in any case unless shown to be controlled to afford the highest efficiencies and the lowest discharge rates that are reasonable and practicable as specified in Section 1.7, below.

**1.4 Periodic Reports of Emissions - Availability of the Information** The owner or operator of any stationary air-contaminant source in Utah shall furnish to the Committee the periodic reports required under Subsection 26-24-5 (3) Utah Code Annotated, 1953, as amended, and any other information as the Committee may deem necessary to determine whether the source is in compliance with Utah and federal regulations and standards. The information thus obtained will be correlated with applicable emission standards or limitations and will be available to the public during normal business hours at the appropriate office of the Division.

**1.5 Variances Authorized** Variance from these regulations may be granted by the Committee as provided by law (See Section 26-24-11 (5), UCA, 1953, as amended).

a. To permit continued operation of an air pollution source for the time period involved in installing or constructing air pollution control equipment in accordance with a compliance schedule negotiated by the Executive Secretary and approved by the Committee.

b. To permit continued operation of an air pollution source where there is no practicable means known or available for adequate prevention, abatement, or control of the air pollutants involved. Such a variance shall be only until the necessary means for prevention, abatement, or control become known and available, subject to the use of substitute or alternate measures the Committee may prescribe.

c. To permit continued operation of an air pollution source where the control measures, because of their extent or cost, must be spread over a considerable period of time.

Variance requests may be submitted by the owner or operator who is in control of any plant, building, structure, establishment, process or equipment.

#### **1.6 Notice of Intent to Construct Required**

**1.6.1** Except for the exemptions listed herein, any person planning to construct a new installation which will or might reasonably be expected to become a source of air pollution or to make modifications to an existing installation which will or might reasonably be expected to increase the amount or change the effect of, or the character of, air contaminants discharged, so that such installation may be expected to become a source of air pollution, or any person planning to install an air cleaning device or other equipment intended to control emission of air contaminants from a stationary source, shall submit to the Executive Secretary a notice of intent to construct prior to initiation of construction.



1.6.2 Within 15 days of receipt of such notice, the Executive Secretary may require the submission of plans, specifications and such other information as he deems necessary to determine whether the proposed construction, installation, or establishment will be in accord with applicable sections of Utah Air Conservation Regulations, Environmental Protection Agency Regulations on Standards of Performance for New Stationary Sources, and National Primary and Secondary Ambient Air Quality Standards.

1.6.3 Within 90 days of receipt of plans, specifications and other information required under this section, the Executive Secretary shall issue an order prohibiting the proposed construction, installation or establishment if he deems any part of it inadequate to meet pertinent regulations including the Environmental Protection Agency Regulations on National Primary and Secondary Ambient Air Quality Standards and Standards of Performance for New Stationary Sources, or if he needs more time, not to exceed three 30-day extensions, to review the proposal.

1.6.4 Prior to approving or disapproving the construction of a new installation, the Executive Secretary will advertise notice of his intent to approve or disapprove the construction in a newspaper of general circulation in the locality of the proposed construction site. A 30-day period will be allowed for submission of public comment; at least one location will be provided where the information submitted by the owner or operator and the State's analysis of the effect of the facility on air quality will be available for public inspection. Any comments received during the 30-day period will be considered before issuing an approval notice or an order prohibiting the construction.

1.6.5 Whenever the Executive Secretary determines that the plans, specifications and other information submitted, with such revisions as he may require, are in accord with applicable requirements, he will issue an approval order permitting the proposed construction, installation or establishment, with the further stipulation that all such devices be maintained in good working order. To accommodate stage construction of a large facility, he may issue approval notice of an initial stage prior to receipt of detailed plans for the entire facility provided he is satisfied through a review of general plans that the facility is feasible under the intent of these regulations. Subsequent detailed plans will then be received and processed as prescribed in this section.

1.6.6 The following information should be submitted with the notice of construction:

- a. A description of the nature of the process(es) involved; the nature, procedures for handling, and the quantities of raw materials; the type and quantity of fuels employed; and the nature and quantity of finished product.

- b. Expected composition and physical characteristics of effluent stream both before and after treatment by an air cleaning device, including emission rate, volume, temperature, and concentration of air contaminants.
- c. Size, type, and performance characteristics of air cleaning devices.
- d. Location and elevation of the emission point and other factors relating to dispersion and diffusion of the air contaminant in the relation of the emission to nearby structures and window openings, and other information necessary to appraise the possible effects of the effluent.
- e. The location of planned sampling points and the tests to be made of the completed installation by the owner when necessary to ascertain compliance.

1.6.7 The following types of installations are exempt from the notice of intent to construct requirement:

- a. Comfort heating equipment, boilers, water heaters, air heaters, and steam generators with a rated capacity of less than one million BTU per hour.
- b. Comfort ventilating systems.
- c. Unit space heaters.
- d. Vacuum cleaning systems used exclusively for commercial or residential housekeeping.
- e. Exhaust systems for controlling steam and heat which do not contain combustion products.
- f. Fuel-burning equipment using no other fuel than natural gas, or LPG or other mixed gas distributed by a utility in accordance with the rules of the Public Service Commission of the State of Utah, unless there are emissions other than combustion gases.

#### 1.7 Requirements of Pollution Control Equipment Specified

In all areas of the State, air pollution control equipment and processes shall be selected and operated so as to afford the highest efficiencies and the lowest discharge rates that are reasonable and practicable. Reasonableness and practicability as determined by the Committee shall take into account, among other things, the concentration and characteristics of the air contaminant in the gas stream, technical feasibility for control, and cost benefit relationships.

UTAH STATE DIVISION OF HEALTH

AIR CONSERVATION REGULATIONS

PART II

EMISSION STANDARDS\* (Adopted by the Committee and Board after public hearing)

2.1 Open Burning. (Original Effective date 3/5/69)

2.1.1 Community Waste Disposal - no open burning shall be done at sites used for disposal of community trash, garbage and other wastes except as authorized through a variance or as authorized for a specific period of time by the Air Conservation Committee on the basis of justifiable circumstances reviewed and weighed in terms of pollution effects and other relevant considerations at appropriate hearing following written application.

2.1.2 General Prohibitions - no person shall burn any trash, garbage or other wastes, nor shall conduct any salvage operation by open burning except in conformity with the provisions of Sections 2.1.3 and 2.1.4 below.

2.1.3 Permissible Burning - Without Permit - when not prohibited by other laws or by other officials having jurisdiction and provided that a nuisance is not created, the following types of open burning are permissible without the necessity of securing a permit.

- a. In devices for the primary purpose of preparing food such as outdoor grills and fireplaces.
- b. Camp fires and fires used solely for recreational purposes where such fires are under control of a responsible person.
- c. Indoor fireplaces.
- d. Properly operated industrial flares for combustion of flammable gases.
- e. Burning, on the premises, of combustible household wastes generated by occupants of dwellings of four family units or less in those areas only where no public or duly licensed disposal service is available.

2.1.4 Permissible Burning - With Permit - Exemptions - when not prohibited by other laws or other officials having jurisdiction and when a nuisance is not created, the types of open burning listed as a, b, c, d and e, below, are permissible: (1) under the terms of individual permits issued by authorized local authority under a "clearing index" system approved and coordinated by

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\* Sections 1.3 and 1.7 may require more stringent controls than listed herein; in any event the requirements of Sections 1.3 and 1.7 must be met.

the Utah State Division of Health, or (2) when specifically exempted by the Air Conservation Committee, following written application and appropriate hearing. Application under (2) may be made by a political subdivision of the State as well as by an individual citizen.

- a. Open burning of tree cuttings and slash in forest areas where the cuttings accrue from pulping, lumbering and similar operations, but excluding waste from sawmill operations such as sawdust and scrap lumber.
- b. Open burning of trees and brush within railroad and public road rights-of-way provided that dirt is removed from stumps before burning, and that tires, oil more dense than #2 fuel oil or other materials which can cause severe air pollution are not used to start fires or keep fires burning.
- c. Open burning of solid or liquid fuels or structures for removal of hazards or eyesores or for fireman training purposes when conducted under the direct control and supervision of organized fire departments.
- d. Open burning, in remote areas, of highly explosive or other hazardous materials, for which there is no other known practical method of disposal.
- e. Open burning for special purposes, or under unusual circumstances when approved by the Division following formal request therefore.

## 2.2 Visible Emissions (Original Effective date 4/25/71)

2.2.1 Single sources of emission from existing installations except incinerators and internal combustion engines shall be of a shade or density no darker than a No. 2 Ringelmann Chart (40% black) or an equivalent opacity except as provided in Section 2.2.6.

2.2.2 Single sources of emission from any incinerator or any other new installation except internal combustion engines shall be of a shade or density no darker than a No. 1 Ringelmann Chart (20% black) or an equivalent opacity, except as provided in Section 2.2.6.

- a. For the purposes of this Section, "new installation" shall mean a plant, process or process equipment, construction of which began following the effective date of the regulation concerned. A modified process unit or system shall be construed as a new installation if a physical change in, or change in the method of a process unit or system, increases the amount of any air pollutant by such unit or system or results in the emissions of any air pollutant not previously emitted. An increase in either production rate or hours of operation alone shall not be considered a change in method of operation.

2.2.3 No owner or operator of a gasoline powered vehicle shall allow, cause or permit the emission of visible contaminants except for starting motion no farther than 100 yards or for stationary operation not exceeding 3 minutes in any hour.

2.2.4 Emissions from diesel engines manufactured after January 1, 1973 shall be of a shade or density no darker than a No. 1 Ringelmann Chart (20% black), or an equivalent opacity, except for starting motion no farther than 100 yards or for stationary operation not exceeding 3 minutes in any hour.

2.2.5 Emissions from diesel engines manufactured before January 1, 1973 shall be of a shade or density no darker than a No. 2 Ringelmann Chart (40% black), or equivalent opacity, except for starting motion no farther than 100 yards or for stationary operation not exceeding 3 minutes in any hour.

#### 2.2.6 Exceptions

a. Excessive emissions resulting from the unavoidable break-down of equipment or procedures must be reported immediately (within 24 hours) to the Executive Secretary. Within five days of the beginning of such an incident, a written report shall be submitted to the Executive Secretary which shall include the cause and nature of the event, estimated quantity of pollutant, time of emissions, and steps taken to control the emission and to prevent recurrence. Such emission shall not be deemed in violation providing this report is considered acceptable to the Executive Secretary. If such emissions are predictable, they are covered by the variance procedure.

b. When conducting a procedure or using equipment necessary to the operation of a process other than planned maintenance such as, but not limited to, building a new fire, tube blowing, initial warm-up or start-up locomotives, or cleaning grates, the limits specified in these regulations may be exceeded when it can be demonstrated to be unavoidable.

Emissions exceeding the standard as the result of planned maintenance on an air cleaning unit shall not be deemed a violation provided the Executive Secretary is notified prior to the shut-down of the control unit and he determines that simultaneous shut-down of the air pollution source is not practical.

c. For all other excessive emissions the variance procedure may be employed.

d. An emission failing to meet the standard because of the effect of uncombined water shall not be in violation.

2.2.7 Compliance Method - emissions shall be brought into compliance with these requirements by reduction of the total weight of contaminants discharged per unit of time rather than by dilution of emissions with clean air.

### 2.3 Particulate Emissions (Original Effective date 1/23/72)

2.3.1 The following existing individual sources of emissions shall attain and maintain a minimum of 85% control\* of particulate emissions (based on source emissions at maximum operating capacity while control devices are not operating), subject to the further restrictions imposed by Sections 1.3, 1.7 and 2.2, of these Air Conservation Regulations.

a. Process units or systems emitting 100 tons or more of particulates annually, based on zero control. (Excluded are particulates which are the products of combustion of fuel oil, LPG or natural gas.)

b. All coal-fired steam-electric power generating units.

c. All coal-fired space-heating units with rated input capacities of 10 million BTUs per hour or greater.

### 2.4 Sulfur Content of Fuels (Original Effective date 9/26/71)

2.4.1 Coal or oil burned in any fuel burning or process installation shall contain no more than 1.0% sulfur by weight or 1.5% sulfur by weight, respectively,\*\* except as provided in Section 2.4.2.

2.4.2 Any person engaged in operating fuel burning equipment using coal or fuel oil, may apply for an exemption from the sulfur content restrictions of Section 2.4.1. His application shall furnish evidence, to the satisfaction of the Executive Secretary, that the fuel burning equipment is operating in such a manner as to prevent the emission of sulfur dioxide in amounts greater than would be produced under the limitations of Section 2.4.1. Control apparatus to continuously prevent the emission of sulfur greater than provided by Section 2.4.1 must be specified in the application for an exemption.

2.4.3 In case an exemption is granted, the operator shall install monitoring devices approved by the Executive Secretary. The operator shall provide the Executive Secretary with a monthly summary of the data from such monitors. This summary shall be such as to show the degree of compliance with Section 2.4.1. It shall be submitted no later than the calendar month succeeding its recording.

2.4.4 Methods for determining sulfur content of coal and fuel oil shall be those methods of the American Society for Testing and Materials.

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\*Note: The calculation of 85% control is based on data from the 1970 inventory of emissions.

\*\*Note: Coal containing 1.0% sulfur and oil containing 1.5% sulfur have approximately the same atmospheric SO<sub>x</sub> potential per million BTUs of heat production. Any combination of fuels not exceeding this potential will be acceptable.

## 2.5 Emissions of Sulfur Compounds

2.5.1 New installations with a potential for emission of sulfur compounds as gaseous or mist effluent shall control sulfur oxide emissions as required to avoid exceeding National Primary and Secondary Ambient Air Quality Standards and Federal Standards of Performance for New Stationary Sources.

2.5.2 Existing installations shall control emissions of sulfur compounds as required to insure that National Ambient Air Quality Standards shall never be exceeded. Applicable emission limitations shall never be exceeded, except as hereinafter provided.

2.5.3 In both new and existing installations, excessive emissions resulting from the unavoidable breakdown of equipment or the unavailability of replacement equipment must be reported immediately (within 24 hours) to the Executive Secretary. Within five days of the beginning of such an incident a written report shall be submitted to the Executive Secretary which shall include the cause and nature of the event, estimated quantity of pollutant, time of emissions and steps taken to prevent recurrence. Resultant emission shall not be deemed in violation of emissions control requirements providing the reports are acceptable to the Executive Secretary.

2.5.4 In both new and existing installations the Executive Secretary shall be notified prior to each shut down of a desulfurization unit for scheduled maintenance.

2.5.5 In both new and existing installations any gases by-passing a desulfurization unit during a period of scheduled maintenance shall be otherwise processed by available gas cleaning equipment normally in use preceding the desulfurization unit.

2.5.6 As interim measures which shall apply until July 31, 1979, existing non-ferrous smelters shall utilize the following procedures to achieve maximum control of sulfur oxide emissions and to insure compliance with the requirements of Section 2.5.2: (a) not discharge to the atmosphere sulfur oxides containing more than 3750 tons per month of sulfur, nor discharge to the atmosphere more than 14% per month of input sulfur to their process (feed driers, reactors, converters), whichever is less. This monthly limitation may be exceeded in the case of shut down of control facilities for maintenance or unavoidable breakdown as described in Section 2.5.3 and Section 2.5.4, above; however, it may not be exceeded on an annual basis. Regardless of the number and frequency of equipment breakdowns or planned or unplanned maintenance as described in Section 2.5.3 and Section 2.5.4, above, the running annual average (average of any 12 consecutive months) shall never exceed 3750 tons/month of sulfur of 14% of input sulfur; (b) employ the best engineering practices to capture fugitive emissions; (c) use available desulfurization units and other gas treatment facilities to the maximum extent practical; (d) make necessary modification in production and treatment facilities, as outlined in plans, specifications and compliance schedules approved by the Executive Secretary, and provide space for installation of additional desulfurization and other gas cleaning units which may be found necessary by experience after such modification to meet applicable emission limitations; and (e) employ a system, approved by the Committee and continuously available for monitoring and predicting ambient air concentrations, and limiting emissions of sulfur compounds by curtailment of operations to insure that short term ambient air quality standards are never exceeded.

## 2.6 Automobile Emissions

2.6.1 Automobile Emission Control Devices (Original Effective Date 1/23/72)  
Any person owning or operating any motor vehicle or motor vehicle engine registered in the State of Utah on which is installed or incorporated a system or device for the control of crankcase emissions or exhaust emissions in compliance with the Federal motor vehicle rules, shall maintain the system or device in operable condition and shall use it at all times that the motor vehicle or motor vehicle engine is operated. No person shall remove or make inoperable within the State of Utah the system or device or any part thereof, except for the purpose of installing another system or device, or part thereof, which is equally or more effective in reducing atmospheric emissions from the vehicle.



UTAH STATE DIVISION OF HEALTH

AIR CONSERVATION REGULATIONS

PART III

EMERGENCY CONTROLS\* (Adopted by the Committee and Board after public hearing)(1)

3.1 Air Pollution Emergency Episodes (Effective date 1/23/72)

3.1.1 Determination of an episode and its extent or stage shall be made by the Executive Secretary taking into consideration the following levels of pollutant concentrations:

<u>Pollutant</u>	<u>Time</u>	<u>Ambient Pollutant Concentration</u>		
		<u>Stage I</u>	<u>Stage II</u>	<u>Never to be Exceeded(1)</u>
Particulate (ug/m <sup>3</sup> )(2)	24 hours	500	800	1000
Particulate (COH units)(3)	24 hours			8
Sulfur Oxides (ppm)(4)	24 hours	0.5	0.8	1.0
Product of Particulate and Sulfur Oxide, both in ug/m <sup>3</sup>	24 hours	300,000	450,000	490,000
Product of Particulate expressed in COH units and Sulfur Oxide expressed in ppm				1.5
Carbon Monoxide (ppm)	1 hour	80		125
	4 hours			75
	8 hours	30	40	50
	24 hours	1.0	1.4**	2.0
Nitrogen dioxide (ppm)	1 hour	0.3	0.4	0.5
	24 hours	0.3	0.4	0.5
	1 hour	0.3	0.5**	0.7
	2 hours			0.6
Oxidants (ppm)	4 hours			0.4
	24 hours	0.1	0.2	

(1) The levels listed under "Stage I" and Stage II" are values set by the State; the values under the "Never to be Exceeded" column are Federal requirements applicable throughout the United States.

(2) ug/m<sup>3</sup> is micrograms per cubic meter.

(3) COH unit is a measure of the light obscuring capability of sampled air.

(4) ppm is parts per million.

\* A more detailed description of the Emergency Episode procedures is contained in the Utah Implementation Plan.

\*\* These Standards were inserted as an interpretation and submitted on May 18, 1972.

3.1.2 The Executive Secretary shall also take into consideration, to determine an episode and its extent, rate of change of concentration, meteorological forecasts, and the geographical area of the episode, including a consideration of point and area sources of emission, where applicable.

3.1.3 If an episode is determined to exist, the Director, with concurrence of the Governor shall:

a. Make public announcements pertaining to the existence, extent and area of the episode.

b. Require corrective measures as necessary to prevent a further deterioration of air quality.

3.1.4 Episode termination shall be announced by the Director, with concurrence of the Governor, once monitored pollutant concentration data and meteorological forecasts determine the crisis is over.

Appendix A-1

APPENDIX A

Part I - National Ambient Air Standards\*

A. Particulate

1. National Primary Ambient Air Standard for Particulate - 75 micrograms per cubic meter of air, annual geometric mean; and 260 micrograms per cubic meter of air, maximum 24-hour concentration not to be exceeded more than once per year.
2. National Secondary Ambient Air Standard for Particulate - 60 micrograms per cubic meter of air, annual geometric mean, as a guide to be used in assessing implementation plans to achieve the 24-hour standard; and 150 micrograms per cubic meter, maximum 24-hour concentration not to be exceeded more than once per year.

B. Sulfur Oxides

1. National Primary Ambient Air Standard for Sulfur Oxides (sulfur dioxide) - The national primary ambient air quality standards for sulfur oxides, measured as sulfur dioxide by the reference methods described in 40 CFR, Part 50, Appendix A, or by an equivalent method, are:

(a) 80 micrograms per cubic meter (0.03 ppm) - annual arithmetic mean.

(b) 365 micrograms per cubic meter (0.14 ppm) - maximum 24-hour concentration not to be exceeded more than once per year.

2. National Secondary Ambient Air Quality Standard for Sulfur Oxides (sulfur dioxide) - The national secondary ambient air quality standard for sulfur oxides, measured as sulfur dioxide by the reference method described in 40 CFR, Part 50, Appendix A, or by an equivalent method, is 1,300 micrograms per cubic meter (.5 ppm) - maximum 3-hour concentration not to be exceeded more than once per year.

C. Carbon Monoxide

1. National Primary and Secondary Ambient Air Standard for Carbon Monoxide - 9 ppm maximum 8-hour concentration not to be exceeded more than once per year; and 35 ppm maximum 1-hour concentration not to be exceeded more than once per year.

D. Photochemical Oxidants

1. National Primary and Secondary Ambient Air Standard for Photochemical Oxidants - .08 ppm maximum 1-hour concentration not to be exceeded more than once per year.

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\* National Ambient Air Standards are found in Title 40, Code of Federal Regulations, Part 50. Measurement of standards are by methods stated in above publication and are to be corrected to a reference temperature of 25° C and a reference pressure of 760 millimeters of mercury.

## Appendix A-2

### E. Hydrocarbons

1. National Primary and Secondary Ambient Air Standard for Hydrocarbons - The hydrocarbon standard is for use as a guide in devising implementation plans to achieve oxidant standards and is .24 ppm maximum 3-hour concentration (6 to 9 A.M.) not to be exceeded more than once per year.

### F. Nitrogen Oxides

1. National Primary and Secondary Ambient Air Standard for Nitrogen Oxides - .05 ppm annual arithmetic mean measured as nitrogen dioxide.

## Part II- Federal Standards of Performance for New Stationary Sources

### A. Standards of Performance for Fossil-Fuel Fired Steam Generators

1. Standard for Particulate Matter - emission of particulate matter shall not exceed 0.18 grains per million calories heat input (0.10 lbs. per million BTU) derived from fossil fuel.

2. Standard for Sulfur Dioxide - emission of sulfur dioxide shall not be in excess of (a) 1.4 grains per million calories heat input (0.80 lbs. per million BTU) derived from liquid fossil fuel (b) 2.2 grains per million calories heat input (1.2 lbs. per million BTU) derived from solid fossil fuel (c) when different fossil fuels are burned simultaneously in any combination the applicable standard shall be determined by proration using the following formula:

$$\frac{y (1.4) + a (2.2)}{y + z}$$

where:

y = the percentage of total heat input  
derived from liquid fossil fuel.

z = the percentage of total heat input  
derived from solid fossil fuel.

(d) compliance shall be based on total heat input from all fossil fuels burned, including gaseous fuels.

## Appendix A-3

3. Standard for Nitrogen Oxides - no emission of nitrous oxides, expressed as NO<sub>2</sub>, shall be in excess of: (a) .036 grains per million calories of heat input (0.20 lbs. per million BTU) derived from gaseous fossil fuel (b) 0.54 grains per million calories of heat input (0.30 lbs. per million BTU) derived from liquid fossil fuel (c) 1.26 grains per million calories heat input (0.70 lbs. per million (BTU) derived from solid fossil fuel (except lignite) (d) when different fossil fuels are burned simultaneously in any combination, the applicable standard shall be determined by proration using the following formula:

$$\frac{x (.036) + y (0.54) + z (1.26)}{x + y + z}$$

where:

x = the percentage of total heat input derived from gaseous fossil fuel.

y = the percentage of total heat input derived from liquid fossil fuel.

z = the percentage of total heat input derived from solid fossil fuel (except lignite).

### B. Standards of Performance for Incinerators (Charging rate greater than 50 tons per day)

1. Standard for Particulate Matter - particulate emissions shall not exceed 0.18 g/dscm (0.08 gr/dscf) corrected to 12% CO<sub>2</sub>\*.

### C. Standards of Performance for Portland Cement Plants

1. Standard for Particulate Matter - (a) particulate emissions from any kiln shall not exceed: (1) 0.15 kg per metric ton of feed (dry basis) to the kiln (0.30 lbs. per ton), (2) 10 percent opacity (excluding the presence of uncombined water) (b) particulate emissions from any clinker cooler shall not exceed: (1) 0.050 kg per metric ton of feed (dry basis) to the kiln (0.10 lbs. per ton), (2) 10 percent opacity (excluding the presence of uncombined water) (c) no emissions of any gases may be discharged into the atmosphere from any affected facility other than the kiln or clinker cooler which exhibit 10% opacity or greater, (excluding the presence of uncombined water).

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\*Methods for calculating the adjusted CO<sub>2</sub> percentage are contained in Title 40 CFR, Part 60, Subpart E, paragraph 60.54.

## Appendix A-4

### D. Standards of Performance for Nitric Acid Plants

1. Standards for Nitrogen Oxides - emissions of nitrogen oxides, expressed as  $\text{NO}_2$  shall not exceed: (a) 1.5 kg per metric ton of acid produced (3.0 lbs. per ton), the production being expressed as 100 percent nitric acid (b) 10% opacity (excluding the effects of uncombined water).

### E. Standards of Performance for Sulfuric Acid Plants

1. Standards for Sulfur Dioxide - no emissions of sulfur dioxide shall exceed: (a) 2 kg per metric ton of acid produced (4 lbs. per ton) the production being expressed as 100 percent  $\text{H}_2\text{SO}_4$ .

2. Standard for Acid Mist - no emissions of acid mist, expressed as  $\text{H}_2\text{SO}_4$  shall exceed: (a) 0.075 kg per metric ton of acid produced (0.15 lbs. per ton) the production being expressed as 100%  $\text{H}_2\text{SO}_4$ , (b) 10% opacity or greater (excluding the effect of uncombined water).

### F. Standard of Performance for Asphalt Concrete Plants

1. Standard for Particulate Matter - particulate emissions shall not exceed: (a) 90 mg/dscm (0.04 gr/dscf) (b) 20% opacity (excluding the effect of uncombined water).

### G. Standards for Performance of Petroleum Refineries

1. Standard for Particulate Matter - (a) no emissions of particulate matter from any fluid catalytic cracking unit catalyst regenerator or from any fluid catalytic cracking unit incinerator-waste heat boiler shall exceed: (1) 1.0 kg/1000 kg (1.0 lbs./1000 lbs.) of coke burn-off in the catalyst regenerator, (2) 30 percent opacity or greater, except for 3 minutes in any 1 hour (excluding the effects of uncombined water) (b) in those instances in which auxiliary liquid or solid fossil fuels are burned in the fluid catalytic cracking unit incinerator waste heat boiler, particulate matter in excess of that permitted in paragraph (1) (a) of this section may be emitted to the atmosphere, except that the incremental rate of particulate emissions shall not exceed 0.18 g/million calories (0.10 lbs./million BTU) of heat input attributable to such liquid or solid fuel.

2. Standard for Carbon Monoxide - no emission of carbon monoxide from a fluid catalytic cracking unit catalyst regenerator shall exceed: (a) 0.050 percent by volume.

## Appendix A-5

3. Standard for Sulfur Dioxide - no fuel gas may be burned in any fuel gas combustion device which contains  $H_2S$  in excess of:  
(a) 230 mg/dscm (0.10 gr/dscf), except as provided in paragraph  
(b) below. The combustion of process upset gas in a flare, or the combustion in a flare of process gas or fuel gas which is released to the flare as a result of relief valve leakage, is exempt from this paragraph, (b) the owner or operator of a petroleum refinery may elect to treat the gases resulting from the combustion of fuel gas in a manner which limits the release of  $SO_2$  to the atmosphere if it is shown to the satisfaction of the Administrator that this prevents  $SO_2$  emissions as effectively as compliance with the requirements of paragraph (a) above.

### H. Standards of Performance for Storage Vessels for Petroleum Liquids

1. Standard for Hydrocarbons - petroleum liquids shall be stored as follows: (a) if true vapor pressure of the petroleum liquid, as stored, is equal to or greater than 78 mm Hg (1.5 psia) but not greater than 570 mm Hg (11.1 psia), the storage vessel shall be equipped with a floating roof, a vapor recovery system, or their equivalents, (b) if the true vapor pressure of petroleum liquid is greater than 570 mm Hg (11.1 psia), the storage vessel shall be equipped with a vapor recovery system or its equivalent.

### I. Standards of Performance for Secondary Lead Smelters and Secondary Brass and Bronze Ingot Production Plants

1. Standard for Particulate Matter - (a) no emission of particulate matter from a blast (cupola) or reverberatory furnace shall exceed: (1) 50 mg/dscm (0.022 gr/dscf), (2) 20% opacity (excluding the effects of uncombined water) (b) emissions of particulate matter from any pot furnace shall not exceed: (1) 10 percent opacity (excluding the effects of uncombined water).

### J. Standards of Performance for Secondary Brass and Bronze Ingot Production Plants

1. Standard for Particulate Matter - (a) no particulate emissions from a reverberatory furnace shall exceed: (1) 50 mg/dscm (0.022 gr/dscf), (2) 20 percent opacity (excluding the effects of uncombined water) (b) no particulate emissions from any blast (cupola) or electric furnace shall exceed: (1) 10 percent opacity (excluding the effects of uncombined water).

### K. Standards of Performance for Iron and Steel Mills

1. Standards of Performance for Particulate Matter - emissions of particulate matter shall not exceed: (a) 50 mg/dscm (0.022 gr/dscf).

## Appendix A-6

### L. Standards of Performance for Sewage Treatment Plants

1. Standards for Particulate Matter - particulate emissions from any sewage sludge incinerator shall not exceed: (a) 0.65 g/kg dry sludge input (1.30 lbs./ton dry sludge input) (b) 20 percent opacity (excluding the effects of uncombined water).



APPENDIX B

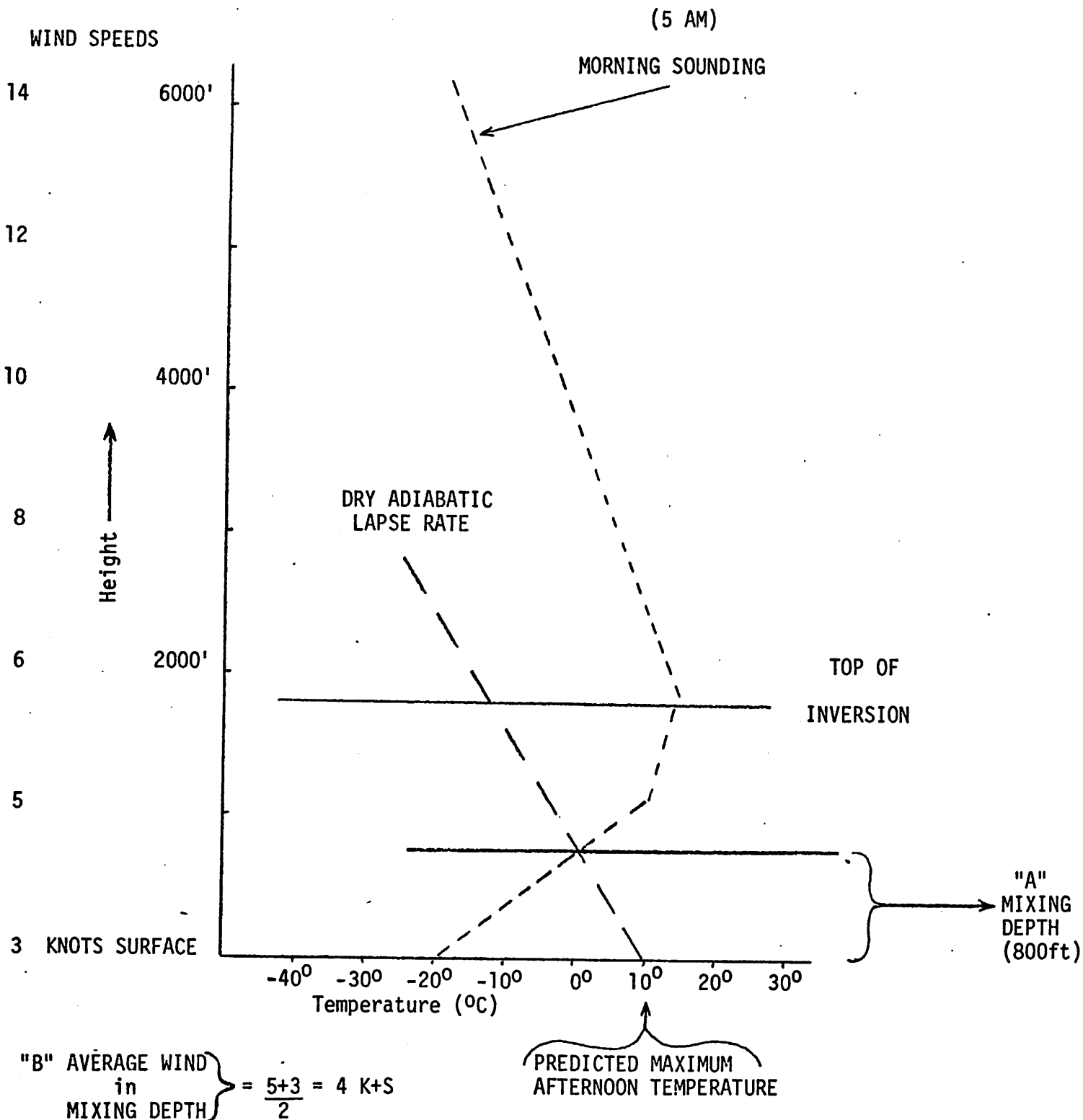
Utah uses a "Clearing Index" as a determining factor in granting permission for certain classes of open burning. The clearing index is directly related to atmospheric stability, indicating periods of ambient pollutant increase. The critical value has been found to be 500; lower values indicate atmospheric stagnation.

Under stable meteorological conditions (including temperature inversions), normal dispersion of pollutants emitted to the atmosphere is markedly diminished. In the Wasatch Front (Provo to Ogden), inversions occur almost daily. In the period March through October, stable atmospheric conditions build only during evening and night; during the daytime, surface heating normally causes the air to become unstable thus dispersing pollutants through a deep layer of the atmosphere and consequently decreasing any pollution concentrations to insignificant levels. In the period November through February, cold air drainage from the mountains into the valleys sometimes causes deep temperature inversions to exist for periods up to three weeks without interruption. During such conditions, visibility decreases because of the formation of fog aggravated by increased particulate concentration.

Photochemical smog (the eye irritant characteristic of Los Angeles inversions) is caused by the interaction of certain organic pollutants with oxidizing pollutants and ultra violet light from the sun. These eye irritants are not a problem in Utah for two reasons: (a) the only time concentrations of organic and oxidizing pollutants could reach levels sufficient to form photochemical smog is under a severe prolonged inversion (which occur only in winter in Utah) (b) in the winter, insolation is of such short duration and at such an acute angle that very little photochemical reaction results. This is the exact opposite to the Los Angeles situation in which the inversions caused by the sea breeze trap the photochemical oxidants which are then acted upon by the high altitude and long duration summer sun.

An example of the method of calculation of the clearing index is diagrammatically shown on the following page.

# CLEARING INDEX



$$\text{CLEARING INDEX} = \frac{\text{"A"} \times \text{"B"}}{100} = \frac{800 \times 4}{100} = \underline{32}$$